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ON THE DEVELOPMENT AND STRUCTURE OF THE TEETH.

Investigations respecting the structure and development of the teeth have been carried on during the last few years, by some of the most celebrated anatomists now living; and it is with much satisfaction that we are enabled to place before our readers the highly interesting and valuable results at which they have arrived. In the present article we propose to examine, firstly, the structure, and secondly the development, of the teeth.

I. The Structure of the Teeth.—In a paper published in the Philosophical Transactions for the year 1678, Leeuwenhoeck announced that, having extracted one of his own teeth, he examined it with lenses, and that he and others "plainly saw that the whole tooth was made up of very small, straight, transparent pipes;" of these pipes Leeuwenhoeck gave two figures, and he spoke of their existence in the teeth of the cow and of the haddock. In the year 1687, the same author wrote a continuation of the above researches, in which he further explained the nature of these "pipes," as existing in man and various animals; and he described a molar tooth of the human subject, which was the object of very careful investigation, to contain 4,822,500 pipes or tubes. This discovery of Leeuwenhoeck remained unnoticed during many years. Writers upon the structure of the teeth who succeeded him, and they have been numerous, contented themselves with describing the appearances observed upon examination by means of the naked eye. Purkinje and Retzius, unknown to each other, conducted researches upon the structure of the teeth, with the assistance of the microscope.

In the year 1835, the former, through his pupil Fränkel, announced the discovery of the tubular structure of ivory. Nearly at the same time, Retzius, in a series of letters to the Royal Society of Stockholm, published the details of his researches. Müller, in his Archives for 1835, analyzed the above researches, and made important additions to them. Mr. Owen has conducted his extensive survey of the same subject into the field of comparative anatomy and geology. Mr. Tomes, another of our countrymen, has also written an original and very interesting paper upon this subject. It is at once a proof of the accuracy of the above observers, and of the perfection which the microscope has attained, that although the use of the highest compound lenses has been found requisite, in order to reveal the more minute structures, all the observers, whose names we have mentioned, agree in every point. We hope that the knowledge of this fact will prove a satisfactory answer to those who refuse to use the microscope, and to listen to the results derived from its use, "because it is liable to so many fallacies."

After the perusal of Brewster's paper "On the Structure of the Crystalline Lens," published in the Philosophical Transactions for the year 1833, which proved that the peculiar mother-of-pearl color of that structure depends upon its fibres; it occurred to Retzius, that the same peculiar color possessed by dental bones might also depend upon the entering into its composition of minute fibres. These minute fibres Retzius readily discovered; and he afterwards proceeded to conduct researches into the structure of the teeth generally.

1. *The Ivory or Bone of the Tooth.*—Retzius states that "having made a fine section of a tooth that has been placed in diluted muriatic acid, and having examined it by means of transmitted light, with a lens magnifying as low as 60 diameters, it will be quite apparent to the observer that it is composed of undulating fibres, in apposition internally with the *cavitas pulpæ*, and externally with the surface of the tooth." If an oblique section be afterwards made, and a magnifying power of 200 diameters be employed, these fibres will appear to be hollow. Retzius found that the above fibres or tubes gave off branches, and that the main trunks opened into the cavitas pulpæ. Although these branches are principally evident towards the external surface of the tooth, the canals at their origin may be distinctly seen to present dichotomous divisions.

Retzius details the appearances revealed by the microscope in the teeth of man and the lower animals. In man, "the tubes which are contiguous appear to run parallel; upon examining a number, they are found to radiate from the central cavity towards the circumference." These tubes have, more or less, three curves, resembling the Greek letter ξ. These curves vary in different teeth, approaching sometimes in form to the Roman letter S. In well-formed teeth, the curves on each side present a certain symmetry. Independent of these general curves of the entire tube, under a higher magnifying power are observed "numerous shorter curvatures, nearly 200 of which may be counted in the space of a line;" these produce the appearance in each tube of an undulating line. Professor Owen has remarked partial dilatations in the tubes of the human teeth, an appearance which has not unfrequently been noticed by ourselves.

Leeuwenhoeck endeavored to ascertain how it was possible that tubes, which appear to run parallel to each other, should fill such a different space on the surface of the tooth, and at the internal cavity. He sought in vain for a trace of branches from them. Purkinje discovered, however, that these tubes do give off branches. Retzius says of them, "from their commencement in the cavitas pulpæ, the tubes appear to be of the same diameter for five sixths of their course;" and this diameter, after repeated admeasurements, he states to be $\frac{1}{385}$ of a line. After running five sixths of their course, they are found to diminish considerably in size, until they disappear or terminate in small, irregular, rounded, and scattered cells. The branches of these tubes are more easily observable in milk teeth. In the permanent teeth, the branches are formed principally towards the extremities of the tubes; in the milk teeth they arise nearly equally from all parts. The branches arising from different tubes do not communicate with each other, except perhaps at their extremities.

Are these fibres tubular? Retzius states that the cavitas pulpæ, viewed under a sufficiently high magnifying power, presents numerous orifices which he considers to be the mouths of the main tubes. He also states that, by making sections of the tubes at right angles with their course, the calibre of these tubes may be determined with facility; and that, upon placing a section made in the above manner upon a dark ground, white spots distinctly denote the tubular orifices. Purkinje and Fränkel convinced themselves of the tubular nature of these fibres, from finding, on making various sections of the tooth, that they were always able to demonstrate the parietes and cavity of the cut tube. Müller states that he has seen these fibres or tubes in the horse, injected with red coloring matter. Mr. Tomes has made some conclusive experiments upon this subject. After having reduced a transverse section of a giraffe's tooth, so as to render the tubes visible by the aid of transmitted light, he added to it, while under the microscope, diluted muriatic acid. "Chemical action immediately commenced, gas was disengaged and proceeded from the cut extremities of the tubes." He states that, more than once, he saw "the bubbles of gas in the tubes, and traced them to their extremities from which they escaped."

The Parietes of the Tubes. Müller has made some researches upon this subject, which are of much interest. He states that the diameter of the tubes is only one fifth or one sixth of the spaces between them; the structure in the intervening spaces necessarily forming the greater part of the bulk of the tooth. He says that, upon breaking fine sections of teeth perpendicular to their fibres, he has frequently seen the latter "extend from the margin beyond the tooth-substance, seeming to be perfectly straight and inflexible;" but the earth being removed from slices of teeth, by means of acids, and the latter being torn in a direction contrary to the course of the fibres, "these fibres appear, upon the torn margin, quite flexible and transparent, and they not unfrequently project considerably beyond the margin of the section." Müller thinks that it may be inferred, from the above experiment, that the tubes have an animal basis or membrane, which in the firm tooth is fragile, and probably penetrated by calcareous salts. Upon this subject Retzius says that, under a certain light, "the mouths of the canals appear bounded by a definite shadow;" and their walls, when the light falls upon them, have a different appearance from the surrounding matter, which Fränkel calls the fundamental substance of the tooth. Frequently the circular orifices have a darker and somewhat yellowish appearance. "We may conclude," says Retzius, "from all this, that the above-described tubes are not merely hollowed out of the fundamental dental substance, but that they are tubes properly so called, consisting of a particular substance, differing from that of the tooth."

The Contents of the Tubes.—Müller was the first who made investigations upon this branch of the subject. He considers the tubes to be filled with organic deposits of calcareous salts, which are soluble in acids. According to him the white color of the tooth is dependent upon these contents, the intervening substance being more or less transparent. He says, "The white color of the tooth disappears upon the application of acids; and teeth thus treated do not regain their color when dried." Observers agree that even if the enamel only be carious, or rather the ivory immediately internal to the enamel, then the tubes passing towards the cavitas pulpæ lose their white color. Müller states that he has seen in carious teeth, independently of the transparent appearance above alluded to, a brittle substance contained in different parts of the tubes; he has, however, also observed the latter in perfectly healthy teeth, and he also speaks of the existence of opaque spots in the course of the tubes. According to Retzius, the contents of the canals consist of an inorganic or earthy substance, which appears white when seen on a dark ground. It appears to consist of "small masses, formed of infinitely delicate particles." The greater or less number and the degree of visibility of these particles appear to depend upon the extent to which the preparation has been penetrated by water, oil, or turpentine. Mr. Tomes agrees with Retzius as to the contents of these tubes. In mammalia he states them to consist of an amorphous mass, the composition of which is the phosphate and carbonate of lime. He concludes that the latter enters into the formation of the above mass, from the results of the experiments which we have before noticed, where he placed a thin section of the tooth of the giraffe in muriatic acid, and observed under the microscope the evolution of gas from the interior of the tubes. Mr. T. states that these tubes in the cartilaginous and osseous fish contain much less of the earthy matter than do those of animals higher in the scale.

The Use of the Tubes.—Retzius believes that the tubes of teeth, as well as the canals of bone (canals of Havers), are for the circulation of nutritious fluids, which he imagines to be secreted by the capillaries which clothe the surface of the pulp. We quote from Retzius the following interesting observations upon this subject.

"We have many examples," he says, "that Nature organizes structures which have a close affinity to each other, according to one and the same plan, and hence we have, in different parts, organized formations, which in some are of the greatest importance, whilst in others they are of much less functional significance, or of none whatever. When we assume, what is highly probable, that in bone the peculiar vessels in question give passage to fluids during the entire life of the animal, which fluids contain the solid as well as the liquid materials of the osseous substance, it does not necessarily follow that the same process must be carried on in the teeth during the whole of life; on the contrary, I am inclined to believe that the vessels of dental bone exercise their most perfect action during the first period only of the formation of the tooth. At the same time, the existence of the continual vital process in the tooth, as well as in the crystalline lens, cannot be doubted, which appears, however, to be carried on without any constant exchange of solid matter, and must hence consist in a renovating circulation of fluids."

Mr. Tomes "conceives that the tubes, containing as they do an amorphous substance, could, by capillary absorption, carry on a kind of slow circulation of the more fluid parts of the blood." Professor Owen accounts for the good effects produced by stopping decayed teeth, by "the calcareous salts in such cases pouring out from the extremities of the tubes divided in the operation; then a thin dense layer intervenes between the exposed surface of the ivory and the stopping."

Of the Intertubular Substance.—Independently of the salts of lime contained in the cavity of the tubes, and of those which, with the animal basis, form the walls of these tubes, Müller considers that salts of lime also enter into the composition of the intervening substance; and, as we have seen above, that the tubes themselves are only of a size equal to one fifth or one sixth of the space between them, the greater portion of calcareous salts which enter into the composition of the tooth must be contained in the intertubular spaces. Müller considers the lime to be either chemically combined with the cartilage of the tooth, or to be deposited in it in an insoluble manner. The lime-earth of the intertubular spaces may be demonstrated by carefully boiling slices of teeth in potash during many hours. The cartilage is dissolved, and the intervening substance becomes opaque and white. According to Müller, the lime thus obtained appears in the form of dense grains. Between the tubes are observed also the ***corpuscles or osseous cells of the tooth***, called by Professor Owen the ***calcigerous cells.*** Some of the smaller tubes terminate in these cells. Valentin believes them to be analogous to the corpuscles of bone. Retzius states "that they, as well as the tubes, contain earthy salts." This he proves by causing their white color to disappear, by placing the preparation in diluted muriatic acid.

The Terminations of the Tubes, according to most observers, take place—first, by entering the corpuscle or cell; secondly, by forming plexuses with one another; thirdly, by being lost in the intertubular substance, either in the interior of the ivory or at its surface of attachment to the enamel and crusta petrosa; fourthly, by communicating with the cells of the crusta petrosa.

2. *The Enamel of the Tooth.*—This is also called the vitreous and adamantine substance. Berzelius states that enamel ***does not contain any animal matter.*** He considers that the delicate tissue which remains after its earthy matter has been dissolved in acid, is the residue of a membrane which formed the internal lining to it. He says that "enamel is not at all blackened on the outside, and but very slightly on the inside, by being burned; and that it does not lose more than two per cent. of its weight from combustion." Retzius, with Berzelius, agrees in the existence of a membrane which lines the enamel internally, and which is a band of connection between it and the external surface of

the ivory. Retzius believes that the inorganic fibres of enamel are surrounded by a capsule of organic matter; a view which we shall see is adopted by Purkinje and Raschkow. The researches of Mr. Nasmyth* show the existence of a layer of substance external to the enamel, and intimately connected with it. This layer Mr. N. has demonstrated in the tooth of the human subject, in the calf, and in many other animals; and he considers its presence to be almost universal. It is shown by the immersion of the tooth in diluted muriatic acid during a very short space of time, when it can be removed in the form of a membrane. It is continuous with the layer called the *crusta petrosa* on the surface of the fang, to which it seems to bear the greatest analogy, and, like the latter, contains the characteristic cells or corpuscles. The existence of this layer on the surface of the enamel, as pointed out by Mr. Nasmyth, we have since demonstrated, by exposing teeth to a rather high temperature, when a *very thin layer of black substance is recognized on their external surface:* it is more easily perceived, and it is thicker, in young than in old teeth. Retzius agrees with Purkinje and Raschkow, in believing that the enamel, previous to the eruption of the tooth, consists of delicate prisms; each prism, upon its solution in muriatic acid, leaves behind a small portion of organic matter. As the latter is not found at a later period, Retzius supposes that it is supplanted by the deposition of earthy matter, so as to remain in a quantity so small as to be incapable of demonstration. The enamel fibres are described by Retzius to be $\frac{1}{461}$ of a line in diameter, the surface of which is marked with transverse striæ, which Retzius believes to be produced by the above-mentioned organic sheath. The fibres of the enamel internally rest upon a delicate membrane interposed between the latter substance and the ivory. Externally, these fibres present a hexagonal form, which is seen by the aid of a lens, magnifying 300 diameters. Where the tooth has not been worn away, the extremities of these fibres are rounded. The enamel fibres are supported upon the ivory in different directions. Towards the apex of the tooth the direction is vertical, and the lowest fibres are transverse. In the lateral part of the tooth there are fibres which are interposed between other fibres, and which themselves do not reach the surface of the ivory. Where the enamel joins the dental bone, it contains at different parts a number of delicate crevices, which appear to have their origins in the separation of the fibres, and produce a dentated appearance, similar to that of the crystalline lens. Retzius states that this appearance is rendered more evident by the immersion of the enamel in a solution of caustic potash, a circumstance which strengthens his belief in the existence of an organic sheath to the enamel fibres. Independently of the transverse striæ on the surface of each enamel fibre, the enamel presents a lamellated appearance, analogous to that of a calculus; this is also evident in ivory generally, but more particularly in that of the elephant's tusk. The fibres of the enamel, like those of the ivory, are more or less tortuous in their course.

3. *The Crusta Petrosa.*—It is universally known that ivory and

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* In a paper read at the Medico-Chirurgical Society.

enamel form the principal part of all simple teeth; and previously to the recent investigations in odontology, it was supposed that no other substance was present in the latter. Retzius and Purkinje have, however, proved that a third substance enters into the formation of almost *all teeth*. This substance is the *crusta petrosa* or *cortical substance*. Frederick Cuvier spoke of this structure as existing in the cachalot. It is found on the external surface of the fangs of the teeth of the mammalia. It consists of cartilage and of osseous earth. According to Retzius, "this cartilage may be removed from the fang of the tooth in the form of a membrane, its earthy salts having been previously dissolved in acid; its consistence is less than that of the cartilage of ivory. In the human tooth, it is an extremely thin stratum which takes its origin at the neck of the tooth where the enamel terminates; it gradually increases in thickness towards the extremity of the root, where it is generally the thickest. It is thinner in young than in old persons. In proportion as the cavitas pulpæ diminishes, this substance is developed until it sometimes becomes thicker than the dental bone itself." The exostoses, so frequently met with on the fangs of the teeth, are of a composition similar to this structure. It is imperfectly formed in the deciduous teeth. Examined by means of the microscope, it presents tubes and osseous cells, bearing the greatest analogy to those of bone and ivory. Professors Retzius and Owen have seen direct communications between the fine branches of the ivory and the tubes and cells of this substance. Mr. Nasmyth states that it always exists on the surface of the enamel; and Purkinje and Fränkel "once traced it a short way upon the surface of the enamel of the tooth of an old man." The two latter observers state that the crusta petrosa has a lamellated structure; they have found it lining the cavitas pulpæ, and have given it the name of *substantia ostoidea*. Retzius thinks that after the obliteration of the cavitas pulpæ, the crusta petrosa is the medium through which nutrient fluids are conveyed to the tooth.

The Cementum.—The structure of which we have just spoken is generally considered to exist upon the root or fang of the tooth only, and to terminate at the point where the enamel is secreted, viz., at the neck of the tooth. As has been stated above, Purkinje and Fränkel, however, once saw this substance covering a small part of the enamel of the tooth of an old man, and Mr. Nasmyth describes it as existing upon the surface of the enamel in most quadrupeds; and he has exhibited specimens and drawings of this disposition in the simple and compound teeth of the human subject, and in the simple tooth of the calf, &c. The cement is a deposition on the surface of the enamel, found in the compound teeth of the herbivorous animals; it has been described by Hunter, Blake, and many other anatomists. Cuvier, in his "Ossemens Fossiles," has given a very minute and interesting account of its development and structure in the grinder of the elephant. It is formed by the capsule, as appears to be the crusta petrosa; it possesses corpuscles and tubes, as does the crusta petrosa; in short, it appears to us that the cementum is simply the crusta petrosa existing on the surface of the enamel; not only, as has been hitherto supposed, in the compound teeth of herbivorous animals, but according to the views of Mr. Nasmyth, in the simple and compound teeth of mammiferous animals. Müller most strangely describes the structure under consideration "as a deposit from the salts of the saliva, and to be essentially the same as what is called tartar in the human subject."

We have given above a condensed account of the views of all recent investigators into the structure of the teeth. We regret that we are prevented by want of space from entering upon the field of comparative anatomy, a field in which Professors Retzius and Owen have pointed out many most interesting and valuable facts.

(To be continued.)

LETTERS FROM THE WEST.—NO. V.

DR. DRAKE AND DR. GROSS.

To the Editor of the Boston Medical and Surgical Journal.

Dear Sir,—I promised you, in my last, a sketch of Drs. Drake and Gross.

Dr. Drake, I presume, must stand, by common consent, at the head of the profession in Cincinnati, and of the faculty of which he is a member; notwithstanding, in some respects, each one of his colleagues may justly claim a superiority over him. He is the oldest resident physician of the city. He is a native of New Jersey, from which State he moved with his parents at an early age, and settled in Kentucky. About thirty-five years since he came to this place, when there were but few houses in all the extent of ground which is now the site of a city containing fifty thousand souls. He commenced the study of medicine with a Dr. Goforth, an old gentleman remarkably fond of the old European authors. The first book he placed in the hands of his student was *Van Swieten's Commentaries on Boerhaave*, which was most diligently studied day and night. After remaining in the city, in the capacity of student, for several years, the doctor mounted a horse and rode the entire distance to Philadelphia to attend the lectures. There he enjoyed the benefit of instruction from Rush and his able colleagues. After attending one course he practised several years—then returned and graduated. He made a permanent residence in Cincinnati, and in the course of eight or ten years his career as a public medical instructer took its beginning. First, he was a professor in Transylvania; next, president of and professor in the Medical College of Ohio, from which he was most ludicrously expelled; third, professor again in the Lexington school; fourth, professor a second time in the Medical College of Ohio; fifth, professor in the Jefferson Medical College of Philadelphia; and now he holds the station of professor of theory and practice in the medical department of Cincinnati College. I might occupy great space in your Journal even with a brief detail of the history of this eminent man; but I will confine myself within the limits of a moderate letter, and present to you a few prominent features in his character as a practitioner, a professor, an author, and a private individual.

As a practitioner, I believe he does not stand so high in the city as he does abroad. The reason of this appears very plain. His engagements are such that he restricts his practice to an almost limited number of families, and is scarcely ever called out of his limits except to a very difficult case, in which the skill of other physicians seems to be exhausted. He then steps in, and, as might reasonably be supposed, helps the patient to his grave, or (as I have frequently heard it expressed) "orders a coffin." His foreign practice is perhaps only second in the West to that of Dr. Dudley, of Lexington, and in this he has always been remarkably successful. His mode of practice is quite complicated and often experimental. He is fond of anything new in the materia medica; hence a common complaint against him among the community is, "he tries too many experiments." He is equally fond of new authors who sustain a high character, and examines with avidity every new theory in medicine upon which he can lay his eyes.

He is not an expert operator. For a number of years past he has devoted his attention to diseases of the eye, and has performed a number of operations upon that organ. Except, then, as an oculist, he cannot be considered a good practical surgeon. I have heard him say that, as long as he had resided in Cincinnati, he had not performed a single amputation; and I believe he is disposed to acknowledge that he would make rather an "awkward fist" with the knife.

As a professor, Dr. Drake, in my estimation, is not second to any man in the United States. I have always associated him with Rush, and surely the father of American medicine could not have contended more zealously for principles in medicine than does the subject of these remarks. His lectures upon the theory and practice of medicine have only to be heard to be appreciated. Such is their plainness, that, unless a student's brain is made up of buttermilk or bonny clabber, they must be understood. His style of lecturing is easy and pleasant; and for the purpose of riveting more closely the attention of all within his hearing, he will often stop, and, under pretext of ignorance, ask of some one present information respecting some anatomical fact. His lectures are not unfrequently spiced with wit and humor.

As an author, the doctor has not yet made the appearance which has long been expected by his numerous friends. For ten years he was the editor of the Western Journal of the Medical and Physical Sciences, and now is one of its editors, if, indeed, the periodical has an existence. It has been suspended for nearly a year, but will probably be revived in a short time. He has published a small work upon medical education, and one entitled "Picture of Cincinnati;" the latter embracing an account of the topography, climate, botany, and diseases of the greater portion of the Miami Valley. He has now a work upon pathology ready for the press, and another upon diseases of the West, &c., which will likely appear before long. His pen, however, is not exclusively devoted to his profession. He has appeared several times in public as a literary writer.

As a private individual, Dr. Drake is exceedingly agreeable. His sociability is not excelled by any of his professional brethren in the city, and, in truth, you rarely meet with an individual in the social circle who combines as many excellent qualities as the doctor. He is fond of rational amusements; and it is truly amusing to see him (a man of nearly sixty) engage in the pastimes of the young. He is expert at battledoor or the hoop, and at a cotillion party he can lead out a young lady on the floor with the ease and elegance of a French dancing master. In his conversation he is generally animated, and oftentimes witty. He is dignified in his deportment, without being morose. He is warmly devoted to his friends, and as warmly inveterate to his avowed enemies. He is polite to his private pupils, and treats them with great respect, without being too familiar. He is a man of common stature—has an active, straight-forward walk—and when hurried, runs along with the agility of a boy of fifteen. His countenance is open, and usually brightened by a smile. His head is covered with a thick coat of dark hair, notwithstanding his advanced age. His forehead is far from being a good phrenological one, being shorter, perhaps, than your little finger, and receding.

The next gentleman of whom I wish to speak, is Professor Gross. I think I cannot be doing injustice to any other member of the American profession, nor would I award any undue merit to Dr. Gross, by declaring him the Bichat of America. I have been acquainted with him for five years past, and have always regarded him as a man of talent, education, indefatigable industry and extensive reading. He graduated at the Jefferson Medical College about ten years since, and resided in Pennsylvania until 1832, when he removed to Cincinnati and accepted the office of demonstrator of anatomy in the Medical College of Ohio. Shortly after his graduation he translated a work upon general anatomy by Bayle and Hollard—a small work upon obstetrics, and wrote a book upon the bones. When the new school was organized in this place, he was appointed professor of general and pathological anatomy, physiology and medical jurisprudence, in which capacity he is still officiating. His cabinet of morbid specimens is not excelled by any west of the mountains, and his devotion to pathological anatomy is certainly not equalled in the Mississippi Valley. He has now in press in your city a very large work upon his favorite department, which will be ready for the schools by the fall. He may be considered a young man. I suppose his age is about 35. I must now close. Next week I shall visit Louisville.

Yours, truly,

Cincinnati, Aug. 7, 1839. W. J. B.

BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON, SEPTEMBER 18, 1839.

AMPUTATION AT THE SHOULDER-JOINT.

On Monday, the 2d inst., Dr. Walker, of Charlestown, amputated at the shoulder-joint on a lad at Lynn, under the following very peculiar circumstances. On the 19th of August, A. E. Blood, aged 13 years, was kicked on the shoulder by a horse, while his hand was on his head. The axilla filled immediately. A physician was sent for, who finding the parts much swollen, but no evidence of anything but a contusion, prescribed the remedies usual in such cases. Eight days from the accident there was a protrusion in the axilla, like a pullet's egg, of a bluish color. By the advice of Professor G——, of N. Y. University, on the fourteenth day, an incision was made through the integuments just over the inferior edge of the pectoralis major. No bleeding or matter flowed from the incision; there was a little bloody serum. The operator not caring to look deeper for *matter*, merely dressed the wound lightly. The next day arterial hemorrhage occurred from the wound. This was arrested by a compress and bandage, but not so but that it followed again the next day and the day after. It was at this juncture that Dr. Walker was sent for. He found the lad pallid from loss of blood, having lost, as was estimated by the physician, full two quarts. The parts about the shoulder were very much swollen; there was no pulsation at the wrist or in the axilla. On examination, pulsation was perceived in the tumor. The arm was of nearly natural color and temperature, with some appearance of commencing œdema.

Dr. Walker stated to the friends the nature of the case, for the cure of which he recommended one of two operations; either the tying of the subclavian, or amputation at the shoulder-joint. He stated the difficulties and dangers of both operations—the comparative safety of the latter, and the inevitably fatal result of the former, if, in cutting down for the artery, he should cut into the aneurismal cavity, and should be unable to find readily and secure the mouth of the bleeding artery. On a view of all the circumstances of the case, the friends desired Dr. Walker to amputate, which he proceeded to do, the subclavian being compressed, as it passes out of the chest, by an assistant. The arteries were secured by ligature, as they were cut, to prevent further loss of blood. On removing the coagula, about sixteen ounces, after the amputation, and looking for the mouth of the artery from which the bleeding came, the subclavian was found completely severed transversely as it passes under the clavicle, the separated ends of which were an inch and a half apart—so that had an attempt been made to tie the subclavian, the lad could hardly have escaped with his life. In what way was the wound of the artery produced? There was no external wound, and the artery was cut short off as clean as though it had been done with a knife. The lad is now, Sept. 9th, doing well.

Suspension of the Medical Department of the Cincinnati College.—The following documents will at least give our readers an insight into the causes of the dissolution of the new medical school in Cincinnati. We are obliged to condense as much as possible, and regret that we cannot give the letter from Dr. Drake to the Committee, which enters fully into the history of the school, with the many difficulties it has had to encounter. This, however, is the less called for in our pages, on account of the information recently furnished by our respected western correspondent.

At a meeting of the Board of Trustees of the College, on the 20th ult. a committee of conference reported, that

Whereas, the Dean of the Medical Faculty has officially announced to the Board, the actual retirement of Dr. Parker from the chair of surgery;

and that there is not now a majority of said Faculty in Cincinnati to agree upon the nomination of a successor ; and *whereas*, the Board consider it essential that any official action on their part, shall be preceded by the recommendation of some specific measure, from at least such members of the Faculty as are at present accessible ; and *whereas*, such recommendation appears to be precluded for the time being, by the non-agreement of the resident professors, in their several views of the case ; therefore,

Resolved, That the Board of Trustees of the Cincinnati College deem it inexpedient to take any active measures in relation to the Medical Department of said institution, until a majority of the Medical Faculty shall distinctly recommend to the Board some specific course of action, adapted, in their opinion, to the existing emergency.

At another meeting on the 24th, after the consideration of several communications received through the committee of conference from the resident members of the Medical Faculty—some of them proposing, as a preliminary to re-organization, that all the medical professorships be declared vacant—it was, on motion,

Resolved, That all the professorships in the medical section of this College be, and the same are hereby declared vacant.

Resolved, That a committee of three be appointed to confer with the ex-members of the late Medical Faculty, and report to this Board, at the next meeting, the opinion of said faculty as to the practicability of re-organizing the medical department of the institution ; together with such *projects* as may be submitted to them by said faculty, for re-filling the existing vacancies in said department.

At the next meeting, on the 27th, the committee reported that they had addressed communications to the late professors, Harrison, Drake, Gross and Rives (the other ex-professors being absent from the city), enclosing to them, severally, the resolutions of the Board passed on the 24th inst.—and that the committee had received the replies of those gentlemen.

The committee greatly regret that they have been forced to the conclusion, by the character of the answers received from the late professors, that, for the present, the re-organization of the medical department is wholly impracticable, and therefore recommend that the department be suspended ; for which purpose the committee respectfully submit the following resolutions :

1st. *Resolved*, That the Medical Department of the Cincinnati College be, and the same is hereby suspended.

2d. *Resolved*, That the Board of Trustees have acquiesced with regret in the necessity of suspending the Medical Department of the College, and, in taking leave of the several professors, they unanimously concur in the expression of their high sense of the character and qualifications of said professors ; as evinced in the acknowledged skill, ability and success with which they have uniformly discharged their official duties in the institution.

3d. *Resolved*, That the said medical professors will be accompanied in their retirement by the best wishes of the Trustees for their future professional success and prosperity.

Annals of American Surgery.—Some time since mention was made of the intention of Dr. J. R. W. Dunbar, of Baltimore, professor of surgery and surgical anatomy in the University of that city, to publish a complete *History of American Surgery.* In order to accomplish an undertaking of such magnitude, embracing a vast geographical field, it is necessary that he should be in possession of everything which has been published in this country, from its earliest settlement, together with all important facts in the private practice of eminent operators, but of whom no permanent record has been made. It is in the power of a multitude of practitioners to transmit something illustrative of men and the practice of surgery in the States before the establishment of medical journals, and it is to be hoped, therefore, that any individual who can cast in a mite, will not neglect to render the assistance which is so urgently solicited. Papers, reports of cases, historical documents, trials for malpractice, decisions of tribunals, statistics of hospitals, &c., may be transmitted immediately to Dr. Dunbar, or sent to the address of the following gentlemen, viz., Dr. Bell, Philadelphia; Dr. A. S. Doane, New York; Professor J. E. Cook, Louisville Medical Institute, Louisville, Ky.; Professor E. Geddings, Charleston, S. C.; Professor Jones, New Orleans; Dr. J. M. Warren, and the editor of this Journal, Boston.

University of Baltimore.—By referring to our advertising page it will be seen that the Medical Department of the University of Baltimore, has made praiseworthy preparations for the coming course of lectures. The Marine and City Hospital presehts an admirable field for clinical observation, under the immediate direction of the professors.

Berkshire Medical Institution.—Prosperity attends this thriving school of medicine, and we trust it always will. Although rival institutions have sprung up at all points of the compass in its neighborhood, the faculty have a reputation that ensures success.

Artificial Anus made in the Groin, with success.—An infant three days old did not present any traces of the anal opening. The raphé of the perineum extended without interruption from the scrotum to the point of the coccyx. The abdomen was tender and tympanitic, but there was no vomiting. The infant had taken the breast several times, and had passed its urine without difficulty. An incision of several lines in length was made over the supposed situation of the anus, and carried to the depth of three quarters of an inch or more, but without success. It was decided then to open the cæcum in the right iliac fossa. An incision was made near the anterior iliac spine; a small knuckle of intestine presented itself, which was replaced, and the cæcum was found without difficulty. It was opened, and several ounces of meconium immediately escaped, followed by a remarkable amelioration of the symptoms. The progress towards cure was very rapid; the alvine evacuations continued to be passed by the artificial opening, and on the eighth day after the operation the sutures were removed.—*British and Foreign Quarterly.*

Retention of a Halfpenny in the Œsophagus for thirty-nine Days.—By R. Davey, Surgeon, Walmer, Eng.—On the 20th of May, a boy, of healthy appearance, aged six years, son of a fisherman, accompanied by his mother, presented himself at my surgery for advice. The woman stated that her son had swallowed a halfpenny about three hours before;

that he had continued retching, at times had great difficulty in breathing, and was unable to swallow. Upon examination I found that the piece of money lay about four inches down in the œsophagus. It was impossible to extract the coin, for so great was the irritation, that upon the slightest attempt, even to open the mouth, violent retching commenced. Having ascertained that the piece of money lay across the passage, and that the boy could swallow liquids, I ordered him to be kept quiet, endeavored to allay the irritation and fever, and directed him to take farinaceous food, with saline purgatives, &c.; but it was not until Friday, the 28th of June, that I found I was able to introduce a hooked probang, which then extracted the halfpenny without pain, the piece of money having been in the throat thirty-nine days. The boy is now perfectly well, although much reduced.—*Lancet.*

Medical Duels.—Dr. Baillie was rejected at the College, He called the next day on Dr. Barrowby, who was one of the censors, and insisted upon his fighting him. Barrowby, who was a little puny man, declined it. "I am only third censor," said he, "in point of age—you must first call out your own countryman, Sir Hans Sloane, our president, and when you have fought him and two senior censors, then I shall be ready to meet you." Many medical duels have been prevented by the difficulty of arranging the "*methodus pugnandi.*" In the instance of Dr. Brocklesby, the number of paces could not be agreed upon; and in the affair between Akenside and Ballow, one had determined never to fight in the morning, and the other that he would never fight in the afternoon.—John Wilkes, who did not stand upon ceremony in these little affairs, when asked by Lord Talbot "How many times they were to fire?" replied, "Just as many as your lordship pleases; I have brought *a bag of bullets and a flask of gunpowder with me.*"—*Physic and Physicians.*

Medical Miscellany.—The Mobile Journal of the 3d inst. contains the following unpleasant announcement: "We regret being compelled to state that the health of our city is worse, and that the number of deaths has greatly increased within the last two days past."—At New Orleans, from the 9th to the 29th ult. the number of interments was 256, of which 179 were reported cases of yellow fever; 95 of the whole died in the Charity Hospital. During the month of August, the number of interments in the same city was about 700; probably 500 by yellow fever.—Morison's Hygeian pills have been the means of another death in England. At the inquest it appeared that the deceased had taken twenty of the pills the day before he died, and twenty in the morning of the succeeding day. A verdict was rendered accordingly. The coroner informed the agent who sold the pills, that had there been full evidence of his being the vender, with the directions accompanying them, he should consider it the duty of the jury to find a verdict of manslaughter against him.—A case is related in the London Lancet, by Dr. Parkes, the attending physician, in which uterine hemorrhage after delivery was arrested by the action of retching. Presuming that a contraction of the abdominal muscles would act on the uterus and tend to allay the bleeding, the fauces were excited by a feather, causing considerable retching, which had the desired effect.—The British and Foreign Medical Review, in an article on midwifery, written by the editor, speaks very favorably of Dr. Hull's utero-abdominal supporter.—

Dr. Conolly, who has heretofore been associated with Dr. Forbes as editor of the above-named periodical, has recently received the appointment of Resident Physician of the Middlesex Lunatic Asylum, and the Review will therefore hereafter be conducted by Dr. F. alone.—Another attempt will be made this (Monday) evening by the Mayor and Aldermen of Boston, to elect a physician to the city's institutions at South Boston. Dr. Butler, of Worcester, has been chosen by the Common Council.

MARRIED,—In New York, Dr. Alexander F. Suter, U. S. A., to Miss Grace Ann Degin.—In Hartford, Ct., Simeon Palmer, Jr., M.D., of Milton, Mass., to Miss Maria B. Spenser, of H.—In Boston, Joseph Moriarty, M.D., to Miss Elizabeth Lowell, daughter of John Hancock, Esq.

DIED,—At New Orleans, of yellow fever, Dr. P. Damour, of Montreal.

Whole number of deaths in Boston for the week ending Sept. 14, 37. Males, 19—females, 18.

Of consumption, 3—marasmus, 2—diarrhœa, 1—worms, 2—typhous fever, 2—infantile, 2—croup, 1—debility, 1—cholera infantum, 5—sudden, 1—scarlet fever, 1—dropsy on the chest, 1—dropsy, 1—inflammation of the bowels, 2—colic, 1—disease of the heart, 1—liver complaint, 1—dysentery, 1—cholera morbus, 1—lung fever, 1—suicide, 1—smallpox, 1—old age, 1—child-bed, 1—stillborn, 2.

WASHINGTON UNIVERSITY OF BALTIMORE.

Medical Department.—Session, 1839—1840.

THE regular Lectures in this institution will commence on the last Monday of October, and continue to the 1st of March. The Faculty consists of the following professors, in the order of their appointment.

J. H. MILLER, M.D., Professor of Anatomy and Physiology.
SAM'L K. JENNINGS, M.D., Professor of Materia Medica, Therapeutics, and Legal Medicine.
WM. W. HANDY, M.D., Professor of Obstetrics, and Diseases of Women and Children.
JOHN C. S. MONKUR, M.D., Professor of Institutes and Practice of Medicine.
EDWARD FOREMAN, M.D., Professor of Chemistry.
JOHN R. W. DUNBAR, M.D., Professor of Surgery and Surgical Anatomy.
W. R. HANDY, Demonstrator of Anatomy.

The plan of this institution is a new one in this country. The college buildings are so constructed, as to present peculiar advantages to the student, which every intelligent medical man will at once perceive, as this plan unites a Medical College, Marine and City Hospital, Rooms and excellent Board for a large number of resident students, who have the charge of the patients under the direction of the professors. Clinical lectures are delivered during the session, on Medicine and Surgery, by the professors of the respective chairs. Northern students who contemplate emigrating to the middle and southern States, are invited to examine the plan and location of this institution.

Additional information in reference to the plan, terms, &c., and a circular, may be obtained by a letter addressed to JOHN R. W. DUNBAR,
S 18—tN *Dean of Medical Faculty.*

SITUATION.

A PHYSICIAN, in a pleasant part of the "Connecticut Valley," wishes to dispose of some personal property, &c., and remove. Reference, for name and place, to the publisher of the Journal.
S 18—3t

TO PHYSICIANS.

A PHYSICIAN who has practised in the place 19 years, and which is within two hours ride of Boston, being desirous of changing his business, offers his stand on such favorable terms as to give a very fine opportunity for a physician to establish himself in practice. Inquire at this office; if by mail, post paid. S 18—tf

MEDICAL INSTITUTION OF YALE COLLEGE.

THE Lectures in this Institution will commence on Thursday, October 3, 1839, and continue sixteen weeks.

BENJAMIN SILLIMAN, M.D. LL.D., Professor of Chemistry, Pharmacy, Mineralogy and Geology.
ELI IVES, M.D., Professor of the Theory and Practice of Physic.
WILLIAM TULLY, M.D., Professor of Materia Medica and Therapeutics.
JONATHAN KNIGHT, M.D., Professor of the Principles and Practice of Surgery.
TIMOTHY P. BEERS, M.D., Professor of Obstetrics.
CHARLES HOOKER, M.D., Professor of Anatomy and Physiology.

The fees, which are required in advance, are $12 50 for each course, except that on obstetrics, which is $6. The matriculation fee is $5, and the contingent bill for the course on chemistry, $2 50. The expense of a full course, therefore, is $76. There is no expense for dissection fee, and for a reasonable price students are furnished with as many subjects as they may require. The lecture and dissection rooms are spacious and commodious, and the various cabinets are richly supplied. The graduation fee is $15. CHARLES HOOKER, *Secretary.*

Yale College, August 1, 1839. Aug 7—6t

BOYLSTON MEDICAL PRIZE QUESTIONS.

The Boylston Medical Committee, appointed by the President and Fellows of Harvard University, consists of the following physicians, viz.:

John C. Warren, M.D.
Rufus Wyman, M.D.
George C. Shattuck, M.D.
Jacob Bigelow, M.D.
Walter Channing, M.D.
George Hayward, M.D.
John Randall, M.D.
Enoch Hale, M.D.
John Ware, M.D.

At the annual meeting of the Committee, on Wednesday, Aug. 7, 1839, the premium of fifty dollars, or a gold medal of that value, was awarded to the author of a dissertation on "the pathology and treatment of Rheumatism," with the motto "Frustra fatigamus remediis ægros;" and a premium of the same value to the author of a dissertation on Scrofula, with the motto "Kunst macht Gunst." On opening the accompanying sealed packets, **Edward Warren, M.D.**, of Boston, was found to be the author of both dissertations.

The following prize questions for the year 1840 are already before the public, viz.:

1st. "The pathology and treatment of Typhus, and Typhoid, Fever."

2d. "The pathology and treatment of Medullary Sarcoma."

Dissertations on these subjects must be transmitted, post paid, to John C. Warren, M.D., Boston, on or before the first Wednesday of April, 1840.

The following questions are now offered for the year 1841, viz.:

1st. "To what extent is disease the effect of changes in the chemical or vital properties of the blood?"

2d. "The structure and diseases of the Teeth; with a numerical solution of the question, can caries of the teeth be retarded by mechanical processes?"

Dissertations on these subjects must be transmitted as above, on or before the first Wednesday of April, 1841.

The author of the best dissertation on either of the above subjects will be entitled to a premium of fifty dollars, or a gold medal of that value, at his option.

Each dissertation must be accompanied by a sealed packet, on which shall be written some device or sentence, and within shall be enclosed the author's name and place of residence. The same device or sentence is to be written on the dissertation to which the packet is attached.

All unsuccessful dissertations are deposited with the Secretary, from whom they may be obtained, if called for within one year after they have been received.

By an order adopted in the year 1826, the Secretary was directed to publish annually the following votes, viz.:

1st. That the Board do not consider themselves as approving the doctrines contained in any of the dissertations to which the premiums may be adjudged.

2d. That in case of the publication of a successful dissertation, the author be considered as bound to print the above vote in connection therewith.

ENOCH HALE, *Secretary.*

Publishers of Newspapers and Medical Journals, throughout the United States, are respectfully requested to give the above an insertion. A14—4t

Boston, August 7, 1837.

PRIVATE MEDICAL INSTRUCTION.

The subscribers are associated for the purpose of giving a complete course of medical instruction. Their pupils will have regular access to the medical and surgical practice of the Massachusetts General Hospital. They will be admitted, also, to the practice of the House of Correction, which constantly presents a large number of important cases, and where opportunities will be afforded for acquiring a practical knowledge of compounding and dispensing medicines. They will be furnished with opportunities for the study of Practical Anatomy, not inferior to any in the country. To the pupils, particularly to those in the last year of their professional studies, facilities will be afforded for acquiring a personal acquaintance with private medical and obstetric practice. Instruction by examinations or lectures will be given in the different branches of medical studies, during the interval between the public lectures of the University. Books, and a room with fire and lights, will be furnished to the students at the expense of the instructers.

GEORGE C. SHATTUCK,
WALTER CHANNING,
JOHN WARE,
GEORGE W. OTIS, Jr.
WINSLOW LEWIS, Jr.

Oct. 31—eptf

MEDICAL LECTURES IN BOSTON.

The Medical Lectures in Harvard University will begin in the Medical College, Mason street, Boston, the first Wednesday in November next, at 9 o'clock, A. M., and continue sixteen weeks.

Anatomy, and Operations of Surgery, by	**John C. Warren, M.D.**
Chemistry, by	**John W. Webster, M.D.**
Midwifery and Medical Jurisprudence, by	**Walter Channing, M.D.**
Materia Medica and Clinical Medicine, by	**Jacob Bigelow, M.D.**
Principles of Surgery and Clinical Surgery, by	**George Hayward, M.D.**
Theory and Practice of Physic, by	**John Ware, M.D.**

At a meeting of the Faculty, it was

Voted, "That no two courses of Lectures shall be admitted to qualify students for gratuitous admission to Lectures in this School which have not been attended in separate years, or at least six months from each other.

WALTER CHANNING, Dean of the Faculty of Medicine.

Boston, July 10, 1839. Jy 17—tN

THE BOSTON MEDICAL AND SURGICAL JOURNAL is published every Wednesday, by D. CLAPP, JR., at 184 Washington St., corner of Franklin St., to whom all communications must be addressed, post paid. It is also published in Monthly Parts, with a printed cover. There are two volumes each year. J. V. C. SM[illegible]H, M.D., Editor. Price $3,00 a year in advance, $3,50 after three months, or $4,00 if not paid within the year. Two copies to the same address, for $5,00 a year, in advance. Orders from a distance must be accompanied by payment in advance or satisfactory reference. Postage the same as for a newspaper.